CLAIMS

1. A method of securely transferring data from a transmitter to a receiver which includes the steps of:

(a) at the transmitter encrypting data which at least in part is based on timer information at the transmitter, to form a transmission word,

(b) transmitting the transmission word to the receiver,

(c) at the receiver decrypting the transmission word,

(d) validating the transmission word by comparing the transmitted timer information to predetermined information at the receiver; and

(e) when a valid transmission word is received adjusting the said predetermined information.

2. A method according to claim 1 wherein the said predetermined information is timer information which is generated at the receiver.

3. A method according to claim 2 wherein the data which is encrypted is compiled into a data word which is encrypted to form the transmission word.

4. A method according to claim 3 wherein the data word additionally includes at least one of the following: identity information pertaining to the transmitter; command information; utility information; fixed code information; and user derived information.

5. A method according to claim 4 wherein the said user derived information is variable via one or more inputs to the transmitter.

6. A method according to claim 3 wherein the transmission word includes the said encrypted data word and at least one of the following: a cold boot counter value; command information; and identity information pertaining to the transmitter.

7. A method according to claim 6 wherein the cold boot counter value, when included in the transmission word, is transmitted in the clear.

8. A method according to claim 2 which includes the step of keeping the transmitter and receiver in synchronism using a cold boot counter which is changed each time the transmitter is powered up or comes out of reset.

9. A method according to claim 6 which includes the steps of keeping the transmitter and receiver in synchronism using a cold boot counter which is changed each time the transmitter is powered up or comes out of reset, and including a count value of the said cold boot counter in the said transmission word.

10. A method according to claim 2 which includes the step of forming a plurality of transmission words, each transmission word being based on respective timer information, in response to a single activation of the transmitter.

11. A method according to claim 2 which includes the step of forming only a single transmission word in response to a single activation of the transmitter.

12. A method according to claim 2 which includes the steps, during a learn mode, of stored learning information at the receiver which is transferred from the transmitter, and deriving a key from the stored learning information.

13. A method according to claim 12 wherein the learning information is stored in a first-in-first out structure.

14. A method according to claim 2 which includes the steps of determining the difference between the said timer information at the transmitter and the said timer information at the receiver, and storing the difference at the receiver.

15. A method according to claim 2 wherein the said timer information at the transmitter is generated by a first timer and the said timer information at the receiver is generated by a second timer and which includes the step of ensuring that the first

timer at its slowest variance is faster than the second timer at its fastest variance.

16. A method according to claim 15 which includes the step, for each valid transmission of transmission word, of calibrating the relationship between the first and second timers.

17. A method according to claim 15 wherein, if the second timer lies outside a predetermined window, the second timer is re-synchronised with the first timer.

18. A method according to claim 17 wherein the re-synchronisation is effected by bringing the first timer into electrical contact with the second timer and then transferring a re-synchronising signal between the first and second timers.

19. A method according to claim 2 wherein, in step (e), the said predetermined information is adjusted to compensate for drift between the transmitter timer and the receiver timer.

20. A method according to claim 1 wherein the said predetermined information is a window size assigned to the receiver with reference to a previously received value and timer information at the transmitter is generated by a first timer which is operated to ensure that the timer information does not fall outside the said window.

21. Apparatus for transferring data which includes a transmitter and a receiver and wherein the transmitter includes a timer and an encryption unit for encrypting data which at least in part is based on timer information from the transmitter timer thereby to form a transmission word, and the receiver includes a receiver timer, a receiver unit for receiving the encrypted transmission word, a decryption unit for decrypting the received transmission word to extract, at least, the said timer information from the transmitter, and a comparator unit for

comparing decrypted transmitter timer information to timer information from the receiver timer to determine the validity of the transmission word.

22. Apparatus according to claim 21 which includes a unit for adjusting the receiver timer information when a valid transmission word is received.

23. A transmitter which includes a timer and an encryption unit for encrypting data which at least in part is based on timer information from the transmitter timer thereby to form a transmission word and wherein the timer is permitted to run only for a limited period after each activation of the transmitter.

24. A transmitter which includes a timer and an encryption unit for encrypting data which at least in part is based on timer information from the transmitter timer thereby to form a transmission word and wherein, when the timer runs beyond a predetermined limit, the transmitter, upon activation, transmits more than one transmission value.